

A REVIEW OF THE NEARCTIC SPECIES OF *CRYPTOPRYMNA*
FÖRSTER, WITH THE DESCRIPTION OF A NEW GENUS,
POLSTONIA (HYMENOPTERA: PTEROMALIDAE)

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Abstract.—The genus *Cryptoprymna* Förster, herein reported from the Nearctic region for the first time, is represented by two species, the Holarctic species *C. atra* (Walker) and the Nearctic species *C. dixiana* n. sp. *Cryptoprymna* is redescribed. *C. atra* is reported herein to be a parasitoid of the pupal stages of syrphids on conifers. A new genus, *Polstonia*, is described with two included Nearctic species: *P. quadriplana* n. sp., the type species, and *P. pelagocorypha* n. sp. A modification of Graham's (1969) key to the genera of the Sphegigasterini is presented to facilitate identification of the genus *Polstonia*. Keys are given to the Nearctic species of both genera.

This is the second, following Heydon and LaBerge (in press), in a series of papers revising the Nearctic miscogasterine Pteromalidae. The specimens upon which this review is based were among the material submitted to me by various collections for that first paper, which was a revision of the genus *Sphegigaster* Spinola. Terminology and methodology follow those used by Heydon and LaBerge (in press) except that descriptions of new species are based on the type-specimens, the "sensillae" of the funicular and club segments are called multiporous plate (abbreviated MPP) sensillae, and the specimens were examined under fluorescent light so may appear more green than described herein when viewed under incandescent light.

This paper contains the first Nearctic record for *Cryptoprymna* Förster. The Nearctic fauna of *Cryptoprymna* contains one Holarctic species, *C. atra* (Walker), and the new Nearctic species *C. dixiana*. Because the original description of the genus (Walker 1833) is now insufficient for distinguishing

this genus from several other similar genera erected since 1833, I am redescribing the genus based on my examination of three of the four described species. The original description of *C. atra* is also very short so I am presenting a detailed diagnosis for distinguishing this species from *C. dixiana*. This diagnosis is based on the Nearctic specimens of *C. atra*, which were compared by me with specimens from the Palearctic region from the British Museum of Natural History.

The new genus *Polstonia* is described and followed by descriptions of the two new Nearctic species included in the genus, *P. quadriplana* and *P. pelagocorypha*. The geographic range of this genus extends into the Neotropical region since I have seen specimens from South America that belong to other species in this genus. None of these Neotropical species will be described here due to lack of sufficient material for a thorough study of the fauna of this region.

Both these genera key to the Sphegigasterini in Graham (1969) and are similar in

having the anterior margin of the clypeus without any projecting denticles and reticulate petioles which are distinctly longer than wide. Relationships between these genera and the other genera of the Miscogasterinae will be discussed more fully in a later paper.

Cryptoprymna Förster

Prosodes Walker, 1833: 371, 374 (Preoccupied by Eschscholtz 1829). Type-species: *Prosodes ater* Walker 1833 (monotypy). Lectotype male in the BMNH. Brulle, 1846: 582–583. Gahan and Fagan, 1923: 121.

Cryptoprymna Förster, 1856: 52 (key), pp. 56, 59. Walker, 1872: 97, 98 (key, synonymy). Ashmead, 1904: 330, 332, 372 (key). Nikol'skaya, 1952: 252 (key). Schmiedeknecht, 1909: 375, 376, 380 (key, diagnosis). Gahan and Fagan, 1923: 41. Peck, Boucek, and Hoffer, 1964: 40 (key). Graham, 1969: 124, 140 (key, synonymy). Dzhanokmen, 1978: 77, 80 (key). Farooqi and Subba Rao, 1985: 260, 310G. Farooqi and Subba Rao, 1986: 285.

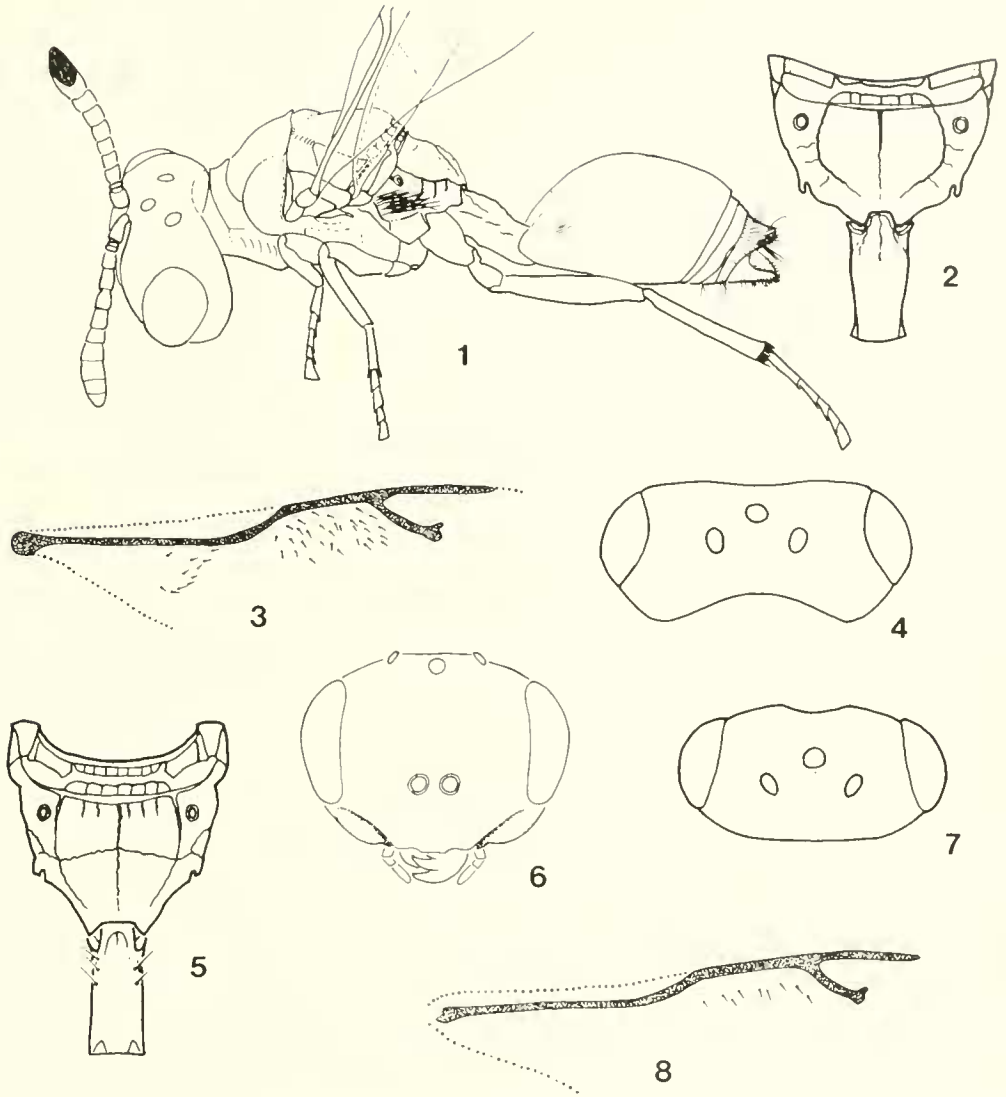
Cryptoprymnus: Thomson, 1878: 17, 22. Cresson, 1887: 75 (key). [Invalid emendation]

Walker (1833) erected the genus *Prosodes* in his *Monographia Chalciditum*. Förster (1856) pointed out that the name *Prosodes* had previously been proposed for a genus of tenebrionid beetles (Eschscholtz 1829), and he renamed the genus *Cryptoprymna*. There are presently three described species: *C. atra* (Walker 1833), a Holarctic species; *C. africanus* Boucek (1976), from southern Africa; and *C. brama* (Motschulsky 1863), from southern Asia. I add a fourth species, *C. dixiana*, from the southeastern United States. Ashmead (1896) described *Cryptoprymna illinoensis* from the Nearctic, but this species was transferred to *Callitula* Spinola (Delucchi 1955) and later synonymized with *Callitula cyrnus* Walker (Burks 1975).

Description.—*Color*: Head, mesosoma, coxae, and petiole black, gaster dark brown. Wing hyaline.

Female.—Head transversely oval in anterior view; 2× as wide as long; clypeus subareolate, anterior margin truncate; gena with broad concavity extending from mouth margin to lower orbit; eye glabrous; occiput concave or straight posteriorly, acarinate. Antenna inserted below middle of face, just above lower orbits; formula 1:1:2:6:3; scape slender, length 8× width, reaching or nearly reaching median ocellus; club distinctly wider than F6, sutures oblique, with a patch of micropilosity on terminal or terminal two segments, terminal spine or projection absent. Mandible 4-tooth, upper two smaller and approximated. Mesosoma compact, rounded dorsally in profile; pronotum with neck short, collar with sharp transverse carina anteriorly and smooth except immediately behind carina; mesoscutum with notauli extending to its hind margin as impressed lines; scutellum as long as wide, frenal sulcus nearly obliterated; prepectus acarinate; mesopleuron with upper epimeron smooth; propodeum as long as scutellum, strongly arched, median carina and plicae sharp, median panels alveolate with some rugae, spiracles round, nucha undeveloped. Wing with basal cell and vein setulose or bare; speculum present; relative lengths of wing veins: marginal > postmarginal > stigmal; stigma unenlarged, only 2–3× as wide as stigmal vein. Legs with coxae relatively small; hind tibia with one apical spur. Petiole much longer than wide, cylindrical; areolate dorsally, strigose laterally; with basal flange laterally and ventrally; lateral setal row sometimes present as a few weak setae anteriorly. Gaster ovate; T1 enlarged, nearly concealing succeeding terga, hind margin convex; hypopygium reaching to tip of gaster.

Male.—Similar to female, but antenna with funiculus parallel-sided, all segments elongate; club lacking area of micropilosity, palps unmodified.



Figs. 1-8. *Cryptoprymna atra* (Walker). 1, Female whole body. 2, Female propodeum and petiole. 3, Female fore wing showing arrangement of dorsal setae along basal vein and admarginal setae. 4, Female head (dorsal view). *C. dixiana* n. sp. 5, Female propodeum and petiole. 6, Female head (anterior view). 7, Female head (dorsal view). 8, Female fore wing showing bare basal vein and arrangement of ventral admarginal setae.

Diagnosis.—*Cryptoprymna* can be distinguished by the following unique combination of characters: edentate clypeus; large area of micropilosity on club; carinate pronotum; propodeum arched and as long as scutellum, median carina and plicae developed; elongate sculptured petiole; enlarged T1; hypopygium extending to tip of

gaster; and loss of metallic coloration. Though these character states are all apomorphic within the Miscogasterinae, none of these characters is unique to this genus. This combination of apomorphies is unique, however.

Biology.—Little is known of the biology of the species in this genus. Graham (1969)

mentions specimens of *C. atra* taken on *Abies* sp. and *Pinus sylvestris* L. Among the Nearctic specimens of *C. atra*, is one from Stockholm, Maine, mounted with a syrphid pupa that has a lateral emergence hole and a label reading "beaten from fir." A specimen of *C. dixiana* n. sp. from Fort Pierce, Florida, was reared from a similar pupa, but there is no information on the plant source of this pupa. It seems likely that species of this genus are parasitoids of syrphids on conifers.

KEY TO NEARCTIC SPECIES OF
CRYPTOPRYMNA FÖRSTER

1. Wing with basal cell and vein setate, ventrally with a patch of setae behind the marginal vein (Fig. 3). Occiput concave in dorsal view (Fig. 4). Petiole bare (Fig. 2) *atra* (Walker)
- Wing with basal cell and vein bare, ventrally with only a single row of setae behind the marginal vein (Fig. 8). Occiput straight in dorsal view (Fig. 7). Petiole with short lateral setal row (Fig. 5) *dixiana* n. sp.

Cryptoprymna atra (Walker)
(Figs. 1–4)

Prosodes atra Walker, 1833: 375. Lectotype male (designated by Graham 1969) in the Westwood collection (BMNH) (not seen). Westwood, 1840: 68–69. Haliday, 1842: V, Plate C (figure). Walker, 1872: 94 (figure); 1873: 371 (figure). Gahan and Fagan, 1923: 41, 121.

Cryptoprymnus cavigena Thomson, 1878: 22. Lectotype female (designated by Graham 1969) in the collection of Universitetets Zoologiska Institutionen, Lund (not seen).

Cryptoprymna atra (Walker): Schmiedeknecht, 1909: 380. Delucchi, 1955: 174 (synonymy). Boucek, 1961: 71 (distribution). Graham, 1969: 140–141 (biology, synonymy, distribution). Boucek, 1976: 14–15. Dzhankomen, 1978: 80.

Diagnosis.—In addition to the characters given in the key, female *C. atra* differ from *C. dixiana* in the following ways: the truncate portion of the clypeus of *C. atra* has a

concave anterior margin and the anterior lateral corners are sharp while the anterior margin is straight and the corners rounded in *C. dixiana*; the antennal flagellum of *C. atra* is longer, $0.89 \pm (\text{S.E.}) 0.014$ ($n = 4$) times as long as the head width compared with 0.81 times in *C. dixiana*; the antennal club of *C. atra* is more slender, 2.1 ± 0.21 times as long as wide compared to 1.6 times in *C. dixiana*; and the wings of *C. atra* are longer, 2.2 ± 0.13 times the mesosomal length versus 1.7 times in *C. dixiana*.

Biology.—The specimen from Stockholm, Maine, was reared from the pupa of a syrphid which was "beaten from fir."

Nearctic material examined (CNC, INHS, USNM): Canada. BRITISH COLUMBIA: Terrace, 8-VIII-1960, 1 ♀. NEW BRUNSWICK: Acadia Experiment Station (Fredrickton) 1-17-VII-1970, 1 ♂, 13-VIII-1970, 1 ♂. QUEBEC: Messines, 10-VII-1947, 1 ♂; Parke Reserve (near St. Eleuthere), 13-VIII-1957, 1 ♂. United States. MAINE: Stockholm, 6-VI-1955, 1 ♀. MICHIGAN: Isle Royale, 3-7-VIII-1936, 1 ♀. OREGON: Saddleback Mt. (near Rose Lodge), 11-VIII-1961, 1 ♀.

The records of *C. atra* from Greenland cited by Bakkendorf (1955) are in error (Boucek 1961).

Cryptoprymna dixiana,
NEW SPECIES
(Figs. 5–8)

Description.—*Holotype female*: Color. Body black with mesosoma tinged blue, scutellum and propodeum tinged gold. Antenna with scape brownish yellow; pedicel and flagellum brown. Legs reddish brown, femora and mid tibia with dark bands; tarsi light brown, pretarsus dark brown. Head and mesosoma with scattered, short (one half ocellar diameter) white setae.

Sculpture.—Clypeus, median area of face subareolate; face laterally and dorsally, frons, vertex finely alveolate; gena coriaceous. Mesosoma with pronotal collar with transverse row of punctures posterior to anterior

transverse carina; mesoscutum alveolate, side lobes more finely so than median lobe; scutellum areolate. Gaster T1 polished; T7 coriaceous.

Structure.—Mesosomal length 0.85 mm. Relative lengths of head, mesosoma, gaster; 16:42.5:33. Head broadly oval in anterior view (Fig. 6), width $1.2 \times$ height (33:27), $2.1 \times$ length (33:16); clypeus with anterior margin nearly straight mesally, anterior corners rounded; eye height $1.4 \times$ length (16:11), $2.1 \times$ malar length (16:7.5); POL $1.3 \times$ OOL (8:6), $1.5 \times$ LOL (8:4); occiput straight in dorsal view (Fig. 7). Antenna inserted a quarter of the way up eye; scape length $0.88 \times$ eye height (14:16), reaching to median ocellus, slightly recurved; length of pedicel plus flagellum $0.82 \times$ head width (27:33); relative lengths of segments (annelli omitted, club taken as a unit) scape = 14:3:2.5:3:3:2.5:2.5:2:8; widths of F1, F6, club as 2:4:5; F1–2 elongate, F3–4 quadrate, F5–6 transverse; MPP sensillae two thirds length of segment, arranged in single row; club length $1.6 \times$ width (8:5), asymmetrically curved to outside, sutures oblique, area of micropilosity extending to midway down C2, C3 pointed apically. Mesosoma with mesoscutal length $0.48 \times$ width (12:25); scutellar length $0.93 \times$ width (13:14); propodeum with costula rugiform, nucha coriaceous, supracoxal flange drawn out over base of hind coxa. Wing length $2.4 \times$ width (71:30); basal cell and basal vein bare (Fig. 8); costal cell with single row of setae; relative lengths of submarginal, marginal, postmarginal, and stigmal veins = 30:14:10:7. Petiole $0.96 \times$ as long as propodeum (13:13.5) (Fig. 5); length $2.4 \times$ maximum width (13:5.5); with a central and diverging lateral carinae on basal one fourth; lateral setal rows present as a patch of a few setae anteriorly. Gaster $1.6 \times$ as long as wide (35:22); T5–6 with distal fringe of setae; hypopygium with short erect white setae.

Allotype male: Color. Similar to female but funiculus, club dark brown; femora dark brown, lighter distally. Structure. Antenna with flagellum parallel-sided, length of ped-

icel plus flagellum $1.3 \times$ head width (39:31); scape length $0.80 \times$ eye height (12:15). Petiole longer (petiole $1.2 \times$ propodeal length [14:12]), more slender (petiolar length $2.8 \times$ width [14:5]). Gaster with terminal segments glabrous.

Diagnosis.—Characters for separating *C. dixiana* from *C. atra* are given in the key to Nearctic species and in the discussion section for *C. atra*. *C. dixiana* can be distinguished from *C. africana* by the same characters given in the key for distinguishing *C. dixiana* from *C. atra*, except that *C. dixiana* and *C. africana* both lack setae on the basal cell and basal vein. The straight occiput and lack of setae on the basal cell of *C. dixiana* distinguishes that species from *C. brama*.

Biology.—The allotype male from Ft. Pierce, Florida, is mounted with a syrphid pupa.

Etymology.—The name is a latinization of Dixie, referring to the southeastern United States distribution of this species.

Type material.—Holotype female is from Andrews, South Carolina, and was collected 8 May 1963 by R. D. Eikenbary (USNM). The allotype male is from Ft. Pierce, Florida, and was collected 26 April 1955 by Holtzberg (USNM).

Polstonia, NEW GENUS

Type-species.—*Polstonia quadriplana* Heydon. The gender is feminine. It is my pleasure to name this genus in honor of Jane Polston with whom I have spent many hours collecting.

Description.—Color: Head, mesosoma, and coxae dark blue to green; metasoma dark reddish brown to black. Wing hyaline.

Female: Face slightly bulging viewed in profile; clypeus subareolate, anterior margin straight or slightly produced; genal concavity short, reaching only one fourth the distance to lower orbit; eye bare, bulging in anterior view; ocellar triangle width $1.5 \times$ length; occiput acarinate, moderately concave. Antenna inserted below middle of face,

just above a line between lower orbits; formula 1:1:2:6:3; scape slender (length $7 \times$ width), extending to mid ocellus or higher; funicular segments with MPP sensillae in a single row; club with ventral patch of micropilosity and terminal spinelike protuberance on C3. Mandible 4-toothed, upper two smaller and approximated or equally spaced. Mesosoma arched dorsally; pronotum with collar lacking anterior transverse carina, smooth strip along hind margin occupying a third to a half median length; mesoscutum with notauli present as shallow furrows, traceable to hind margin as strip of distinct texture; scutellum as long as wide, with 4–6 pairs of lateral setae, frenal sulcus obscure or absent; prepectus acarinate; mesopleuron with upper epimeron smooth; propodeum with plicae and median carina complete and distinct, median panels alveolate-rugose, nucha obscurely sculptured crescent. Wing with basal vein setate; speculum present; relative lengths of wing veins: marginal $>$ postmarginal \gg stigmal; stigma small, width only $2\text{--}3 \times$ width of stigmal vein. Hind tibia with one apical spur. Petiole sculptured dorsally, length $2\text{--}3 \times$ width; lateral setal row extending nearly entire length of petiole, setae projecting perpendicularly. Metasoma ovate, plicate ventrally near insertion of petiole; T1 and T2 subequal in length, distinctly longer than the succeeding terga, T1 with hind margin straight or sinuate.

Male: Similar to female but club lacking area of micropilosity, palpi unmodified.

Diagnosis.—The possession by *Polstonia* of an edentate clypeus, genal concavities, a thirteen-segmented antenna, the female antennal club with terminal spine and ventral patch of micropilosity, propodeum with distinct median carina and plicae, and an elongate and reticulate petiole makes this genus phenetically similar to *Toxeuma* Walker. It differs from *Toxeuma* by having an acarinate pronotal collar, notauli obscure posteriorly, frenal suture obscured, and lengths of T1 and T2 subequal. In these

characters, *Polstonia* resembles *Sphegigaster*. However, *Sphegigaster* species have a bidentate clypeus, never have the female antennal club with a terminal spine and only rarely with a ventral patch of micropilosity, their propodeum lacks the median carina and plicae, and the hind margin of gastral T1 is broadly concave. In contrast, *Polstonia* species have an edentate clypeus, the antennal club in the female with a terminal spine and ventral patch of micropilosity, a distinct median carina and plicae on the propodeum, and gastral T1 has a nearly straight hind margin. The elongate petiole with complete lateral rows of setae that stick out perpendicularly is the one unique apomorphic character defining this genus.

Polstonia can be included in Graham's (1969) key to the Sphegigasterini by modifying the first half of couplet one so it goes to couplet 1a instead of 2, and then inserting the following couplet after the first:

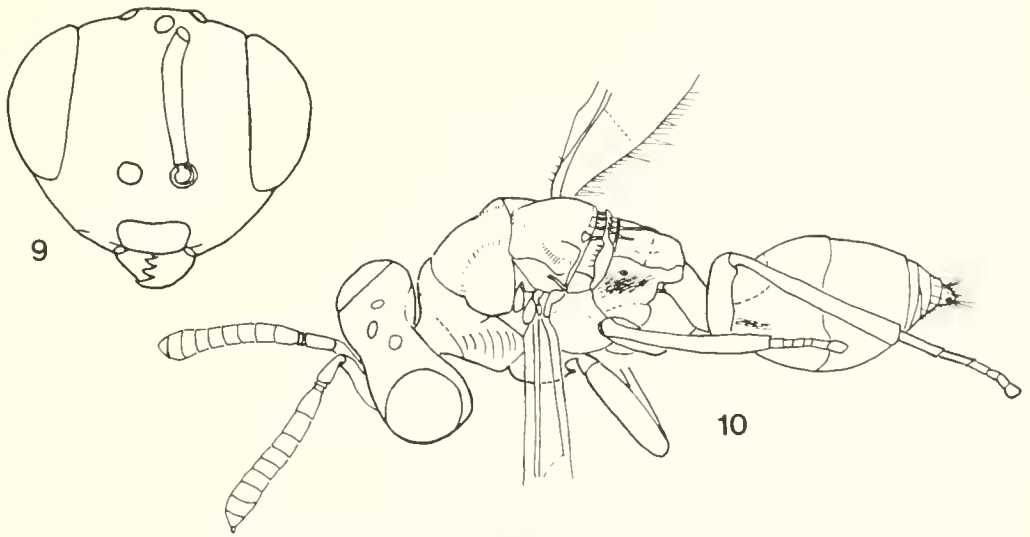
- 1a. Clypeus simple (Fig. 9). Petiole with lateral row of setae extending at least half its length (Figs. 11 and 12) *Polstonia* Heydon
 — Clypeus bidentate or tridentate. Petiole with a short row of setae extending less than half its length 2

KEY TO SPECIES OF *POLSTONIA* HEYDON

1. Petiole less than $2.3 \times$ as long as wide, rounded dorsally, and areolate with reticulations only $2 \times$ as long as wide. Propodeum with area between the basal foveae relatively smooth and divided into four equal sized regions (Fig. 11). Usually only the hind femur with basal dark band *quadriplana* n. sp.
 — Petiole more than $2.5 \times$ as long as wide, flattened dorsally, and strigulate dorsally with reticulations three or more times as long as wide. Propodeum areolate between basal foveae, sublateral carinae weak or absent (Fig. 12). All femora with dark bands basally *pelagocorypha* n. sp.

Polstonia quadriplana, NEW SPECIES (Figs. 9–11)

Description.—*Holotype female:* Color. Head, mesosoma, coxae dark green with coppery reflections; occiput, neck, pleural

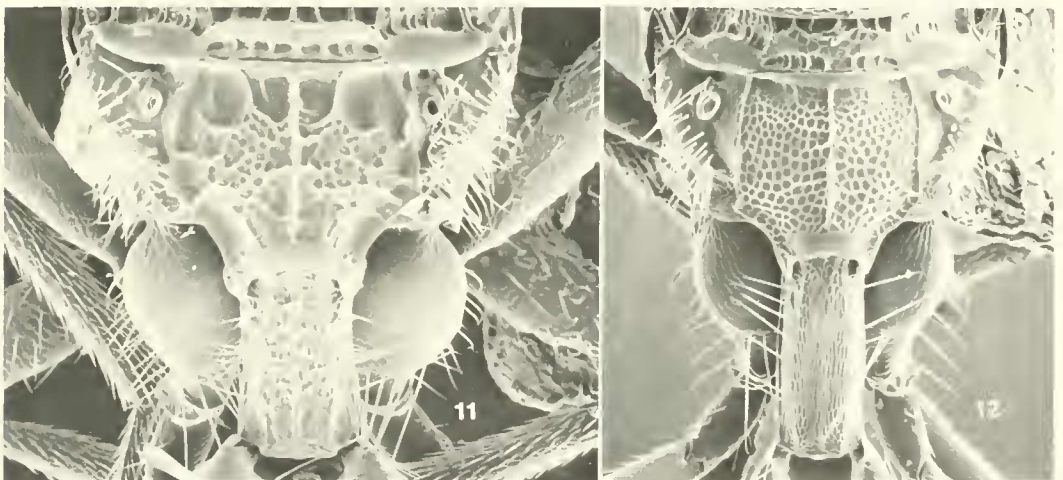


Figs. 9–10. *Polstonia quadriplana* n. sp. 9, Female head (anterior view). 10, Female whole body.

regions, petiole darker; propodeum paler. Gaster black with greenish reflections. Antenna with scape brownish yellow; pedicel brown; flagellum black. Mandible brownish yellow; teeth reddish brown. Legs brownish yellow; strong dark bands on mid tibia and hind femur with greenish reflections, fore femur with weak broad dark band; pretarsus darker. Wing veins pale brown. Head, dorsum of thorax with distinct brown setae.

Sculpture.—Clypeus subareolate; face, frons, vertex, occiput alveolate; neck alveolate; mesoscutum, scutellum, axilla coarsely alveolate; propodeum with median panels areolate-rugose; petiole finely areolate, cells $2\times$ as long as wide; gastral terga 4–7 subimbricate.

Structure.—Mesosomal length 0.96 mm. Relative lengths of head, mesosoma, metasoma = 15:48:42. Head width $1.2\times$ height



Figs. 11–12. *Polstonia quadriplana* n. sp. 11, Female propodeum and petiole. *P. pelagocorypha* n. sp. 12, Female propodeum and petiole.

(37:30) (Fig. 9), $2.5 \times$ length (37:15); clypeus with anterior margin slightly produced; eye height $1.3 \times$ width (18:13.5), $2.0 \times$ malar length (18:9); POL $1.4 \times$ OOL (7:5), $2.3 \times$ LOL (7:3). Antenna with length of pedicel plus flagellum $0.97 \times$ head width (36:37); relative lengths of segments (annelli omitted, club counted as a unit) scape = 17:6:5:4:3.5:2.5:3:3:7.5; widths of F1, F6, club as 3:4.5:5; funicular segments narrowed at bases; F1–2 elongate, F3 quadrate, F4–6 transverse; MPP sensillae prominent; club length $1.5 \times$ width (7.5:5), sutures oblique. Mesosomal length $1.7 \times$ width (48:29); scutellar length $0.97 \times$ width (15.5:16); dorsellum tilted nearly perpendicularly with respect to lateral metanota (Fig. 10), anterior edge regularly rounded, surface with little sculpture; propodeum with spiracles round, groove between basal foveae smooth and divided by the median and two short submedian carinae into four subequal areas (Fig. 11). Wing length $2.2 \times$ width (85:38); relative lengths of submarginal, marginal, postmarginal, and stigmal veins = 35:18:16:11; basal vein marked by row of eight setae; basal cell with one seta distally on left wing. Petiole length $1.9 \times$ width (13:7); $1.1 \times$ as long as propodeum (13:12); rounded dorsally; median carina complete and sharp; length of setae in lateral setal rows a half to three fourths width of petiole. Metasoma broadly oval; length $1.4 \times$ width (42.5:32.5); basal region with scattered setae laterally; T4–7 with submarginal row of setae.

Allotype male: Color similar to female except head and dorsum of mesosoma lacking coppery reflections; antennal flagellum brown. Sculpture similar to holotype. Mesosomal length 0.98 mm. Antenna with pedicel plus flagellum $1.2 \times$ head width (43:35); relative lengths of segments 15:5:5:4.5:4.5:4.5:4:4:9; width of F1, F6, club as 3:3.5:3.5. Petiole length $2.0 \times$ width (14:7). Wings with basal vein having five setae on right wing and four on left.

Variation.—Female mesosomal length varies between 0.76 and 0.96 mm. Body

color varies from bluish black, to greenish black, to dark green with coppery reflections like the holotype. A female from Ohio has all the femora with dark bands basally. The groove between the basal foveae is sometimes weakly sculptured posteriorly, but there is always a smooth strip of at least one spiracular outside diameter along anterior margin of propodeum. There are occasional specimens with two strong sublateral carinae on one side or the other. Male mesosomal length varies between 0.90 and 0.98 mm. The body color variation is similar to that of females.

Diagnosis.—In addition to the characters given in the key, the vertex of female *P. quadriplana* is usually nearly concolorous with the dorsum of the mesosoma; in *P. pelagocorypha*, the vertex is distinctly paler. The antenna of female *P. quadriplana* has each funicular segment narrowed basally, the prominent MPP sensillae give the segments a coarse texture, and the club varies between 1.4 and 2.0 times as long as wide. The antenna of female *P. pelagocorypha* has cylindrical funicular segments with a rather smooth texture, and the club varies between 2.0 and 2.6 times as long as wide. In male *P. quadriplana*, the combined length of the pedicel and flagellum is between 4.1 and 4.8 times as long as the club length; it is between 3.6 and 3.9 times as long as the club in *P. pelagocorypha*. The dorsellum of *P. quadriplana* is usually smooth and tilted nearly perpendicularly with respect to the metanota. In *P. pelagocorypha*, the dorsellum is usually alveolate and in nearly the same plane as the metanota. The lateral setae on the petiole are shorter in *P. quadriplana*, only a half to three fourths the width of the petiole (Fig. 11); they are nearly as long as the petiole width in *P. pelagocorypha* (Fig. 12). The petiole always has a distinct and complete median carina in *P. quadriplana* (Fig. 11); in *P. pelagocorypha*, the median carina may be lacking or incomplete, or there may be multiple fine longitudinal rugae (Fig. 12).

Biology.—The host(s) is unknown; however, the numerous specimens from Nova Scotia were collected during a study in which apple trees were fumigated and the arthropods on them were collected on sheets beneath the trees (W. R. M. Mason, pers. comm.).

Etymology.—The name comes from the Latin words *quadrus*, meaning fourfold, and *planus*, meaning flat or level, and refers to the four smoothish areas along the anterior margin of the propodeum, which are diagnostic of this species.

Type material.—Holotype female is from Mt. Ste. Marie Low, Quebec, and was collected 20 September 1965 by J. R. Vockeroth (CNC). The allotype male is from Cooper's Rock State Forest (near Morgantown), West Virginia, and was collected 22 June 1964 by O. Peck (CNC). Fifty-three paratypes are as follows (CNC, INHS, USNM): Canada. BRITISH COLUMBIA: Cultus Lake, 14-VII-1948, 1 ♀. NEW BRUNSWICK: Kouchibouguac National Park, 12-IX-1977, 1 ♀. NOVA SCOTIA: Aldershot, 4-VII-1952, 2 ♂, 1 ♀, 15-VII-1952, 1 ♂, 7 ♀, 28-VII-1952, 11 ♀, 8-VII-1952, 4 ♀, 18-VIII-1950, 4 ♀, 9-IX-1950, 1 ♀. ONTARIO: Innisville, 18-VIII-1963, 1 ♀; Simcoe, 19-VI-1939, 1 ♀. QUEBEC: Lac Brulle, 15-VII-1946, 1 ♂. Mt. Ste. Marie Low, 20-IX-1965, 3 ♀; Old Chelsea, 3-VII-1969, 1 ♂, 5-VIII-1969, 9 ♀. United States. NEW YORK: Lake Placid, 15-VIII-1896, 1 ♀; Otter Lake (near Meridian), 25-VII-1946, 1 ♀. OHIO: Barberton, 30-VI-1936, 1 ♀. VIRGINIA: Monterey, 22-VI-1964, 1 ♂.

Polstonia pelagocorypha,

NEW SPECIES

(Fig. 12)

Description.—*Holotype female*: Color. Head with face, frons dark green; vertex blue-green; occiput greenish black. Antenna with scape brownish yellow; pedicel, flagellum dark reddish brown. Mandible yellowish brown; teeth reddish. Mesosoma with

dorsum dark green; pleural area, coxae, propodeum, petiole, gaster bluish black. Legs brownish yellow except trochanters, basal two thirds of fore and mid femora, hind femur brown (hind femur with traces of metallic coloring); pretarsus black. Wing with veins pale brown. Head and mesosoma with pale brown setae.

Sculpture.—Pattern similar to *P. quadriplana* except texture delicate, particularly on head, and petiole strigulate dorsally, cells three or more times as long as wide.

Structure.—Mesosomal length 0.92 mm. Head width $1.2 \times$ height (34:27), $2.3 \times$ length (34:14.5); clypeus with anterior margin slightly produced and reflexed; eye height $1.2 \times$ length (15:12), $1.7 \times$ malar length (15:9); POL $1.5 \times$ OOL (7.5:5), $2.1 \times$ OOL (7.5:3.5). Antenna with length of pedicel plus flagellum $1.0 \times$ head width (34.5:34); relative lengths of antennal segments (annelli omitted, club counted as a unit) scape = 15:5:3.5:2.5:3:2.5:3:2.5:10.5; widths of F1, F6, club as 3:3.5:4; funicular segments cylindrical; MPP sensillae fine, club length $2.6 \times$ width (10.5:4), sutures only slightly oblique. Mesosoma $1.7 \times$ as long as wide (46:26.5); scutellar length $0.86 \times$ width (12:14); dorsellum in same plane as metanota, anterior margin scalloped, finely alveolate; propodeum with groove between basal foveae subareolate, with short weak sublateral carinae (Fig. 12). Wing length $2.2 \times$ width (89:41); relative lengths of submarginal, marginal, postmarginal, stigmal veins as 32:18.5:17:10; basal vein marked by row of nine setae on left wing; one seta in basal cell of left wing. Petiole length $3.2 \times$ width (16:5), $1.3 \times$ as long as propodeum (16:12); flattened dorsally; median carina visible only in posterior third; length of lateral setae nearly equal to width of petiole (Fig. 12). Gaster fusiform, length $1.5 \times$ width (35:23); succeeding terga withdrawn beneath T2 (specimens air-dried).

Allotype male: Color. Similar to holotype but paler, dorsum of mesosoma green with faint yellowish reflections, antennal pedicel

and flagellum brown, bands on femora dark but extending only one third length of mid and three fourths length of hind femora. Mesosomal length 0.84 mm. Antenna with pedicel plus flagellum $0.98 \times$ as long as head width (32.5:33); relative lengths of segments as 13:4.5:4:3.5:3.5:3.5:3.5:9; parallel-sided, widths of F1, F6, club as 3:3:3. Petiole length $2.6 \times$ width (16.6). Wing with basal cell bare except for a couple of setae adjacent to setal row on basal vein on right wing.

Variation.—The female mesosomal length varies between 0.77 and 0.96 mm. Body color varies from bluish black to dark green. The female from North Carolina has the vertex green; in the other females it is blue-green like the holotype. The groove between the basal foveae of the propodeum is sometimes crossed by one or more weak carinae, but these are less than one spiracular outside diameter in length. The petiole varies between 2.6 and 3.0 times as long as wide, and its dorsal surface is either acarinate, with weak or incomplete median carina, or with several long longitudinal rugae. The male mesosomal length varies between 0.67 and 0.94 mm. The color of the males varies from green with coppery reflections to bluish black. The male from Illinois has a brownish yellow flagellum and very weak dark bands on the femora. The petiole varies between 2.7 and 3.0 times as long as wide.

Diagnosis.—For a detailed diagnosis see that of *P. quadriplana* above.

Biology.—The host(s) of this species is unknown.

Etymology.—The name is from the Greek words *pelagos*, meaning sea, and *koryphe*, meaning top of the head, and refers to the sea-green vertex of the female.

Type material.—Holotype female (AMNH) is from 1.5 miles SW of Lolo Hot Springs, Montana, and was collected 22 July 1978 by N. L. Herman. Allotype male (CNC) is from Whiteface Mountain, New York, and was collected 19 July 1962, by J. C. Chillecott. Thirteen additional paratypes are

as follows (CMNH, CNC, FSCA, INHS, USNM): Canada. ALBERTA: Edmonton, 20-VI-1937, 1 ♂. NEW BRUNSWICK: Fundy National Park, 10-VII-1970, 1 ♀; Kouchibouguac National Park, 10-XI-1977, 1 ♀. QUEBEC: Duchensay, 5-VII-1953, 1 ♀. SASKATCHEWAN: White Fox, 18-VII-1944, 1 ♀. United States. ALASKA: Matanuska, 6-X-1945, 1 ♂; Palmer, 1-VIII-1948, 1 ♂. ILLINOIS: MacLean Co., 30-V-1883, 1 ♀; Urbana, 10-VI-1928, 1 ♂. MICHIGAN: Manistee Co., 5-VII-1957, 1 ♂. NORTH CAROLINA: Lake Junaluska, 27-V-1954, 1 ♀. WEST VIRGINIA: Spruce Knob, 5-VIII-1960, 1 ♂, Weston, 13-18-IX-1938, 1 ♂.

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